

WHAT IS CLAIMED:

1. A circuit interrupting device comprising:

a first electrical conductor capable of being electrically connected to a source of electricity;

5 a second electrical conductor capable of conducting electrical current to a load when electrically connected to said first electrical conductor;

a third electrical conductor capable of being electrically connected to user accessible plugs and/or receptacles where the first, second and third electrical conductors are electrically isolated from each other;

10 at least one movable bridge electrically connected to the first electrical conductor, said at least one movable bridge capable of electrically connecting the first, second and third electrical conductors to each other;

a circuit interrupting portion configured to cause electrical discontinuity between said first, second and third electrical conductors upon the occurrence of a

15 predetermined condition; and

a reset portion configured to reestablish electrical continuity between the first, second and third electrical conductors after said predetermined condition occurs.

2. The circuit interrupting device of claim 1 where the movable bridge is

20 positioned so as to connect the first electrical conductor to the second and third electrical conductors when the device is reset and the at least one movable bridge is positioned so as to disconnect the first electrical conductor from the second and third electrical conductors when the device is in a trip condition.

3. The circuit interrupting device of claim 1 where the condition comprises a ground fault, an arc fault, an appliance leakage fault, an equipment leakage fault or an immersion detection fault.

5 4. The circuit interrupting device of claim 1 further comprising a trip portion that is configured to cause electrical discontinuity between the first, second and third electrical conductors.

10 5. The circuit interrupting device of claim 1 further comprising a sensing circuit for detecting an occurrence of a predetermined condition.

6. The circuit interrupting device of claim 1 where the circuit interrupting portion comprises a coil and plunger assembly at least one movable bridge and a sensing circuit used to detect a predetermined condition.

15 7. The circuit interrupting device of claim 1 where the at least one movable bridge has:

a pair of contacts attached thereto where such pair is electrically connected to the first electrical conductor and positioned so as to make electrical contact with a corresponding pair of load contacts electrically connected to the second electrical conductor; and

another pair of contacts attached thereto where such pair is electrically connected to the first electrical conductor and positioned so as to make electrical contact

with a corresponding pair of user accessible contacts electrically connected to the third electrical conductor.

8. The circuit interrupting device of claim 1 where the first electrical  
5 conductor comprises a contact connected to electric conducting material.

9. The circuit interrupting device of claim 1 where the second electrical conductor comprises a contact connected to electric conducting material.

10 10. The circuit interrupting device of claim 1 where the third electrical conductor comprises a contact connected to a conducting frame forming a receptacle that is accessible to a user of the device.

11. A circuit interrupting device comprising:  
15 a first pair of terminals capable of being electrically connected to a source of electricity;  
a second pair of terminals capable of conducting electrical current to a load when electrically connected to said first pair of terminals;  
a third pair of terminals capable of being electrically connected to user  
20 accessible plugs and/or receptacles where the first , second and third pair of terminals are electrically isolated from each other;

at least one movable bridge electrically connected to the first pair of terminals, said at least one movable bridge being capable of electrically connecting the first, second and third pairs of terminals to each other;

a circuit interrupting portion configured to cause electrical discontinuity  
5 between said first, second and third pairs of terminals upon the occurrence of a predetermined condition; and

a reset portion configured to reestablish electrical continuity between the first, second and third pairs of terminals after said predetermined condition occurs.

10           12.     The circuit interrupting device of claim 11 where the at least one movable bridge is positioned so as to connect the first pair of terminals to the second and third pairs of terminals when the device is reset and the movable bridge is positioned so as to disconnect the first pair of terminals from the second and third pairs of terminals when the device is in a trip condition.

15           13.     The circuit interrupting device of claim 11 where the condition comprises a ground fault, an arc fault, an appliance leakage fault, equipment leakage fault or an immersion detection fault.

20           14.     The circuit interrupting device of claim 11 further comprising a trip portion that is configured to cause electrical discontinuity between the first, second and third pairs of terminals.

15. The circuit interrupting device of claim 11 further comprising a sensing circuit for detecting an occurrence of a predetermined condition.

16. The circuit interrupting device of claim 11 where the circuit interrupting  
5 device portion comprises a coil and plunger assembly, at least one movable bridge and a sensing circuit used to detect a predetermined condition.

17. The circuit interrupting device of claim 11 where the circuit interrupting  
portion comprises a coil and plunger assembly and a mechanical switch assembly for  
10 engaging a sensing circuit used to detect the condition.

18. The circuit interrupting device of claim 11 where the at least one movable bridge has:

a pair of contacts attached to the at least one movable bridge where such  
15 pair is electrically connected to the first pair of terminals and positioned so as to make electrical contact with a corresponding pair of load contacts electrically connected to the second pair of terminals; and

another pair of contacts attached to the movable bridge where such pair is electrically connected to the first pair of terminals and positioned so as to make electrical  
20 contact with a corresponding pair of user accessible contacts electrically connected to the third pair of terminals.

19. The circuit interrupting device of claim 11 where the first pair of terminals comprises a pair of contacts connected to electrical conductors.

20. The circuit interrupting device of claim 11 where the second pair of  
5 terminals comprises a pair of contacts connected to electrical conductors.

21. The circuit interrupting device of claim 11 where the third pair of terminals comprises a pair of contacts connected to a conducting frame forming a pair of receptacles that is accessible to a user of the device.

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22. A GFCI device comprising:

a housing;

a pair of line terminals disposed at least partially within said housing and capable of being electrically connected to a source of electricity;

15 a pair of load terminals disposed at least partially within said housing and capable of conducting electrical current to a load when electrically connected to said line terminals;

a pair of face terminals connected to a pair of user accessible receptacles where each face terminals extends from and is integral with a metallic structure disposed  
20 at least partially within said housing where said line, load and face terminal pairs are electrically isolated from each other;

at least one movable bridge having a pair of bridge load contacts and a pair of bridge face contacts attached thereto where said bridge load contacts and said bridge face contacts are electrically connected to the line terminals;

5 a circuit interrupting portion comprising at least one coil and movable plunger assembly, a mechanical switch, the mechanical switch being positioned to engage a sensing circuit used to detect a predetermined condition; and

a reset portion comprising a reset button positioned to engage a portion of the sensing circuit causing the coil assembly to be activated resulting in the at least one movable bridge to be positioned so that the bridge load contacts electrically make with a  
10 corresponding pair of load terminal contacts and the bridge face contacts electrically make with a corresponding pair of face terminal contacts where the pair of load terminal contacts are electrically connected to the pair of load terminals and the pair of face terminal contacts are electrically connected to the pair of face terminals.